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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/549,615	09/20/2005	Masayuki Hoshino	L9289.05173	8137

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EXAMINER

NGUYEN, LINH V

ART UNIT PAPER NUMBER

2819

DATE MAILED: 06/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/549,615

Applicant(s)

HOSHINO ET AL.

Examiner

Linh V. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 4/18/06.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 7 is/are rejected.
- 7) ☒ Claim(s) 5 and 6 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 September 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5/17/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is in response to communication filed on 4/18/06, which the English translation for foreign priority document has filed to obviate the reference from previous office action.

Specification

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-4 and 7 are rejected under 35 U.S.C. 102(e) as being anticipated by Lee et al. Pub. 2003/0060173.

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Regarding claim 1, Fig. 3 of Lee et al. disclosing a coding (31) apparatus comprising: a coder (80) which encodes transmission data (N Transport)) and outputs systematic bits (S) and parity bits (P); a modulator (84) that modulates the output systematic bits (S) and parity bits (P) and output systematic in mutually different modulation schemes (See Fig. 5 [84]); a transmitter (88) that transmits the modulated systematic bits and parity bits from respective antennas (paragraph 0086).

Regarding claim 2, wherein the modulator (Fig. 5[84]) has a modulation scheme instructor (86) that applies different modulation schemes (1st Modulator for system bits, and 2nd modulator for parity bits) to the systematic bits and parity bits; a bit arrangement determiner (82) that determines bit arrangements of the systematic bits (S) and the parity bits (P) according the applied modulation schemes (86); and a mapping section (88) that performs symbol mapping on the systematic bits and the parity bits with the determined bit arrangements (Fig. 4).

Regarding claim 7, the claim incorporated the same subject matter as of claim 1, and rejected along the same rationale.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. Claim 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. as applied to claim 2 above, and further in view of Eroz et al. U.S. patent No. 6,574,767.

Regarding claim 3, Fig. 3 – 5 of Lee et al. as applied to claim 2 above disclosed wherein the modulation scheme instructor (86) applies a modulation scheme (84) to system bits and parity bits (P), and the bit arrangement (88) determiner determines a bit arrangement (paragraph 0086) where the parity bits are arranged on the in-phase axis and the quadrature axis (in-phase and quadrature axis of parity bits are intrinsic characteristics for space-time turbo coding to in wireless communication). However Lee et al. do not disclose a larger modulation M-array number to the parity bits than the systematic bits.

Fig. 3 of Eroz et al. discloses a turbo encoder having a large modulation 2-array number to parity bits (310, 314) than the system bits (302).

Lee et al. and Eroz et al. are common subject matter of turbo encoder modulation for mobile communication. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the turbo coding scheme of Eroz et al. into the turbo coding scheme of Lee et al. for the purpose of providing an optimal performance in conjunction with a variety of different interleaves depths and Turbo code rates (Eroz's Col. 2 lines 44 – 45).

Regarding claim 4, Lee et al. as applied to claim 2 above, do not explicitly disclose wherein the coder outputs plurality of parity bits for one systematic bit.

Eroz et al. discloses a coder (Fig. 3) outputs plurality of parity bits (310, 314) for one systematic bits (302).

Lee et al. and Erozt et al. are common subject matter of turbo encoder modulation for mobile communication. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporated the turbo coding scheme of Erozt et al. into the turbo coding scheme of Lee et al. for the purpose of providing an optimal performance in conjunction with a variety of different interleaves depths and Turbo code rates (Erozt's Col. 2 lines44 – 45).

Allowable Subject Matter

7. Claims 5 and 6 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

With respect to claim 5, the prior art does not discloses wherein the modulator further has an arrangement axis exchanger that exchanges arrangement axes on coordinates to perform bit arrangements determined the bit arrangement determiner, and the mapping section performs symbol mapping on the systematic bits and the parity bits with bit arrangements the coordinates where the arrangement axes are exchanged.

With respect to claim 6, the prior art does not discloses a detector that detects the number retransmission times transmission data, and wherein the bit arrangement determiner changes arrangements the systematic and the parity bits corresponding to the detected number of retransmission times.

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Prior Art

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Contact Information

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Linh Van Nguyen whose telephone number is (571) 272-1810. The examiner can normally be reached from 8:30 – 5:00 Monday-Friday. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Rexford Barnie can be reached at (571) 272-7492. The fax phone numbers for the organization where this application or proceeding is assigned are (571-273-8300) for regular communications and (571-273-8300) for After Final communications.

2/21/06

Linh Van Nguyen

A handwritten signature in black ink, appearing to read 'Linh Van Nguyen', written in a cursive style.

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